Forest Insect Conditions

Institute of Forest Genetics, Placerville

February 1953

APPRAISAL SURVEY

Introduction

On February 12-13, 1953, an appraisal survey was conducted in the Placerville Infestation Unit by M. M. Furniss and R. Z. Callaham of the Berkeley Forest Insect Laboratory and Emery Kimbrough of the Institute of Forest Genetics. The purpose of the survey was to determine the number and location of ponderosa pine trees currently infested with the western pine beetle or the five-spined engraver beetles, within a two-mile radius of pine plantations at the Institute. Control of bark beetle damage within this zone was inaugurated on an annual basis early in 1951 to aid in preventing attack on any of the experimental trees in the Institute's arboretum.

Spotting was timed, as it was, in order to allow infested trees to fade and the oak trees to drop their leaves. This simplified the locating of infested trees and enabled topographic viewing from vantage points along the extensive road system throughout the area.

Extent and Location of the 1953 Infestation

All trees which had recently faded were examined for the presence of bark beetles. Those which contained brood were blazed and marked. A total of 35 such trees were found and their locations plotted on the accompanying map.

The location of twenty-one of the infested trees is associated with recent logging or fire. Except for these instances involving unnatural conditions, the general level of infestation in the control zone is low. Rupley's 1951 cutting in section 12 appears to be returning to normal, following last year when 17 trees were treated there. However, a recent small-saw-log cutting operation was conducted in section 14, and investigation disclosed abundant fresh slash infested with pine engraver beetles. This area could develop into a situation similar to that experienced last winter on Rupley's 1951 cutting.

Another area worthy of note is within a small burn beside Highway 50 in section 12. The fire occurred last summer and killed a number of trees on approximately 5 acres. Ten of these trees now contain western pine beetle brood. The remainder are infested with wood-borers and are not suitable for western pine beetle attack. Bark beetle activity in the vicinity of the burn may be expected to diminish rapidly with the treatment of the 10 currently infested trees.

Recommendations for Control

The unusually warm weather this winter has sped the development of bark beetle brood. Some trees contained pupae of the western pine beetle at the time of examination. For this reason, it is urged that control work be undertaken immediately.

Decking and burning has proved the best method of control in previous years at the Institute, and should continue to be used. In instances where the small trees are felled in heavy brush, it is cheaper to remove the tree in sections to the dump where burning can be done safely. However, as long as the brood is completely destroyed, the means should be at the option of the control crew foreman.

Other Insect Problems

Two major insect problems within the Institute grounds which need to be provided for are the killing of young pines by the reproduction weevil and shoot and twig girdling by grasshoppers. Timing and particulars involved in control of these insects will be at the direction of R. Z. Callaham or the resident entomologist.

Reproduction weevil: A native infestation of this insect has been made use of in selected transplant beds in order to determine the resistance of certain pine species and hybrids to attack. Elsewhere, their activity could cause serious setbacks in experimental plantations composed of well established and extremely valuable trees. Because the insect is native, or naturally present, and the need for protection is great, it is recommended that preventative control of the reproduction weevil be undertaken by spraying the DDT solution used in past years in plantations under 6 years of age. Because of their susceptibility, all Pinus scopulorum strains, irrespective of age, also should be sprayed.

Grasshoppers: These insects pose another threat to the young pine plantations through their feeding upon shoots and twigs. Damage by them was quite serious two years ago, but failed to materialize last year. Discing between tree rows was begun last year and may have helped in preventing further damage. On the basis of only one year of experience, discing should be continued. However, should damage be resumed at any time in spite of this action, the plantations will need to be sprayed immediately with aldrin as was done in 1951.

Financial Aspects

Requests for future funds to cover costs of suppressing the various insects threatening the trees on the ground of the Institute should be made on the basis of anticipated needs determined from surveys performed by the Forest Insect Laboratory. These requests should list the amount necessary to control each threatening insect pest, rather than a lump sum for all insect work.

This year, $500 has been made available for all insect control work at the Institute. Expenditure of this money is estimated as follows: bark beetle control: $400, reproduction weevil control: $50, grasshopper control: $50.

The large amount of work which will be able to be financed from this fund is exceptional in view of present day costs of control elsewhere. That they are able to do this is greatly to the credit of the Institute personnel.

The excellence of the control operation is due to the work of Bill Cummings, Superintendent, Emery Kimbrough, spotter and member of the treating crew, and Al Liddicott and Jack Carpender, members of the treating crew.

Forest Insect Laboratory
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